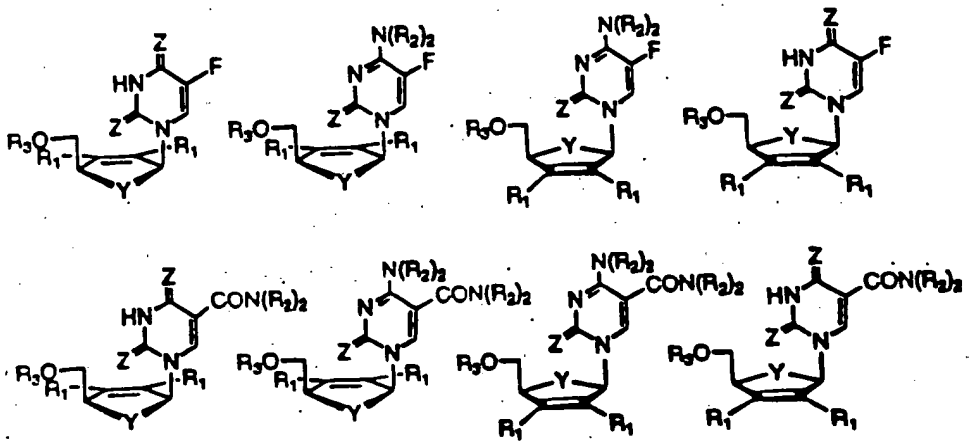
We claim.

1. A compound of the structure:



wherein: X is O, S, CH_2, CHF, or CF_2;

Y is O, S, CH_2, CHF, CF_2;

Z is independently O, S or Se;

R_1 is independently H or F;

R_2 is independently H, OH, C_1 to C_6 alkyl, or C(O)(C_1 to C_6 alkyl);

R_3 is H, C(O)(C_1-C_6 alkyl); alkyl, or mono-, di- or triphosphate; and

R_4 is independently H, F, Cl, Br, I, OH, -O(C_1-C_6alkyl), -SH, -S(C_1-C_6alkyl); or -C_1-C_6alkyl.

2. The compound of claim 1, wherein Y is O or S; Z is O; R_1 is H; R_2 is H; and R_3 is H.

3. The compound of claim 1, wherein X is O or S; Y is O; Z is O; R_1 is H; R_2 is H; R_3 is H, and R_4 is independently H or Fl.

4. The compound of claim 1 in the form of a racemic mixture.

5. The compound of claim 1 in the form of a ß-D-enantiomer.

6. The compound of claim 1 in the form of a ß-L-enantiomer.

7. The compound of claim 1 in enantiomerically nriched form.

8. The compound of claim 1 selected from the group consisting of the racemic mixture, ß-D- or ß-L-enantiomer of 2-hydroxymethyl-5-(N-5'-carboxamidouracil-1'-yl)-1,3-oxathiolane; 2-hydroxymethyl-4-(N-5'-carboxamidouracil-1'-yl)-1,3-dioxolane; 2-hydroxymethyl-4-(N-5'-fluorocytosin-1'-yl)-1,3-dithiolane; 2-hydroxymethyl-4-(N-5'-carboxamidouracil-1'-yl)-1,3-dithiolane; 2-hydroxymethyl-4-(N-5'-fluorocytosin-1'-yl)-1,3-oxathiolane; 2-hydroxymethyl-4-(N-5'-carboxamidouracil-1'-yl)-1,3-oxathiolane; 2',3'-dideoxy-2',3'-didehydro-5-fluorocytidine; 2',3'-dideoxy-2',3'-didehydro-5-carboxamidocytidine; 2',3'-dideoxy-5-fluorocytidine; 2',3'-dideoxy-5-carboxamidocytidine; 2',3'-dideoxy-2',3'-didehydro-2',5-difluorocytidine; 2',3'-dideoxy-2',3'-didehydro-2'-fluoro-5-carboxamidocytidine, 2',3'-dideoxy-2',3'-didehydro-3',5-difluorocytidine; 2',3'-dideoxy-2',3'-didehydro-3'-fluoro-5-carboxamidocytidine; 2',3'-dideoxy-2',3'-didehydro-2',3',5-trifluorocytidine; 2',3'-dideoxy-2',3'-didehydro-2',3'-difluoro-5-carboxamidocytidine; 2',3'-dideoxy-2',3'-didehydro-5-fluorocytidine; 2',3'-dideoxy-2',3'-didehydro-5-carboxamidocytidine; 2',3'-dideoxy-5-fluorocytidine; 2',3'-dideoxy-5-carboxamidocytidin ; 2',3'-dideoxy-2',3'-didehydro-2',5-difluorocytidine; 2',3'-dideoxy-2',3'-didehydro-2'-fluoro-5-carboxamidocytidine; 2',3'-dideoxy-2',3'-didehydro-

3',5-difluorouridine; 2',3'-dideoxy-2',3'-didehydro-3'-fluoro-5-carboxamidouridine; 2',3'-dideoxy-2',3'-didehydro-2',3',5-trifluorouridine; and 2',3'-dideoxy-2',3'-didehydro-2',3'-difluoro-5-carboxamidouridine.

9. The compound of claim 1 selected from the group consisting of the racemic mixture, the ß-L-enantiomer and the ß-D-enantiomer of 5-carboxylic acid amide-2',3'-dideoxy-3'-thiacytidine.

10. A composition comprising an effective HIV or HBV treatment amount of a compound of claim 1 in combination with a compound selected from the group consisting of the (-)-enantiomer of 2-hydroxymethyl-5-(5-fluorocytosin-1-yl)-1,3-oxathiolane (FTC); the (-)-enantiomer of 2-hydroxymethyl-5-(cytosin-1-yl)-1,3-oxathiolane (3TC); carbovir, acyclovir, interferon, AZT, DDI, DDC, L-(-)-FMAU, and D4T.

11. A pharmaceutical composition comprising an effective amount to treat HIV or HBV infection in humans of a compound of claim 1 in the racemic or enantiomerically enriched form, or its physiologically acceptable salt, in a pharmaceutically acceptable carrier.

12. A method for treating HIV infection in humans comprising administering an effective amount of a compound of claim 1 or its physiologically acceptable derivative or physiologically acceptable salt, in a pharmaceutically acceptabl carrier.

13. A method for treating HBV infection in humans comprising administering an effective amount of a compound of claim 1 or its physiologically acceptable derivative or physiologically acceptable salt, in a pharmaceutically acceptable carrier.